

Weathering

Weathering is the process of physical or chemical breakdown of rock due to exposure to the atmosphere over time.

There are two types of weathering:

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1. **Mechanical Weathering** occurs when rock is split or broken into smaller pieces of the same material without changing its composition. Forces that can cause mechanical weathering include:
 - Impact (Something striking the rock like wind-blown sand, moving water, or ice)
 - Expansion/Contraction, and
 - Biological effects

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- Types of Mechanical Weathering:
- Abrasion – Rocks are worn down by particles of sand, moving water, or moving ice.
- Wedging – This occurs when something gets into cracks in rocks forcing the cracks to get bigger. Over time the rock can split apart. Two types of wedging are:

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- **Frost Wedging** - When water freezes, it expands. Water seeping into the cracks in a rock causes the cracks to split open a little further. The continued pattern of water freezing and thawing will eventually cause the rock to split.
- **Plant Wedging** – Plant roots can grow into cracks in rocks causing the cracks to widen. As the root grows, the rock will eventually split apart.

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2. **Chemical Weathering** occurs when a rock's minerals are chemically changed into different substances and the rock breaks down. Two key agents of chemical weathering are:
- **Water**
 - **Oxygen** in the atmosphere can cause certain minerals to oxidize. Iron ore in rock rusting is an example of chemical weathering.

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So, how fast do rocks weather? The rate of weathering, or how fast rocks weather depends on three factors:

1. The kind of rock – Granite (which is *really* hard) weathers much more slowly than sandstone.
2. Climate – Humid climates cause [rocks](#) to weather faster than dry climates, and
3. The size of the rocks that are weathering – small rocks have more surface area to their volume, and so they weather faster.